

**AMENDMENTS TO THE CLAIMS**

This listing of claims replaces all prior versions, and listings, of claims in the present application.

**IN THE CLAIMS:**

1-24. (Canceled).

25. (Currently Amended) A mutant  $\alpha$ -amylase obtained by introducing at least one  $\alpha$  mutation into SEQ ID NO:1, wherein said at least one mutation consists of: the substitution of an amino acid residue selected from the group consisting of: the 11<sup>th</sup> Tyr, 16<sup>th</sup> Glu, 49<sup>th</sup> Asn, 84<sup>th</sup> Glu, 107<sup>th</sup> Met, 144<sup>th</sup> Ser, 167<sup>th</sup> Gln, 169<sup>th</sup> Tyr, 178<sup>th</sup> Ala, 188<sup>th</sup> Glu, 190<sup>th</sup> Asn, 205<sup>th</sup> His and 209<sup>th</sup> Gln, with another amino acid.

26. (Previously Presented - Allowed) The mutant  $\alpha$ -amylase according to claim 25, wherein the 11<sup>th</sup> Tyr of SEQ ID NO:1 is substituted with Phe, the 16<sup>th</sup> Glu of SEQ ID NO:1 is substituted with Pro, the 49<sup>th</sup> Asn of SEQ ID NO:1 is substituted with Ser, the 167 Gln of SEQ ID NO:1 is substituted with Glu, the 169<sup>th</sup> Tyr of SEQ ID NO:1 is substituted with Lys, the 190<sup>th</sup> Asn of SEQ ID NO:1 is substituted with Phe, the 205<sup>th</sup> His of SEQ ID NO:1 is substituted with Arg, and the 209<sup>th</sup> Gln of SEQ ID NO:1 is substituted with Val.

27. (Previously Presented - Allowed) A mutant  $\alpha$ -amylase obtained by introducing a mutation into SEQ ID NO:1, and wherein said mutation consists of: substituting an amino terminal sequence from 1<sup>st</sup> Asp through 19<sup>th</sup> Gly of SEQ ID NO:1 with an amino acid sequence from 1<sup>st</sup> His to 21<sup>st</sup> Gly of SEQ ID NO:2.

28-29. (Canceled).

30. (New) A mutant  $\alpha$ -amylase obtained by introducing a mutation into SEQ ID NO:1, wherein said mutation consists of: the substitution of an amino acid residue selected from the group consisting of: 167<sup>th</sup> Gln and 169<sup>th</sup> Tyr with another amino acid, respectively.

31. (New) A mutant  $\alpha$ -amylase obtained by introducing a mutation into SEQ ID NO:1, wherein said mutation consists of: the substitution of an amino acid residue selected from the group consisting of: 190<sup>th</sup> Asn and 209<sup>th</sup> Gln with another amino acid, respectively.

32. (New) A mutant  $\alpha$ -amylase obtained by introducing a mutation into SEQ ID NO:1,

wherein said mutation consists of:

the substitution of an amino acid residue selected from the group consisting of: 167<sup>th</sup> Gln, 169<sup>th</sup> Tyr, 190<sup>th</sup> Asn, and 209<sup>th</sup> Gln with another amino acid, respectively.

33. (New) A mutant  $\alpha$ -amylase obtained by introducing a mutation into SEQ ID NO:1,

wherein said mutation consists of:

the substitution of an amino acid residue selected from the group consisting of: 107<sup>th</sup> Met, 167<sup>th</sup> Gln, 169<sup>th</sup> Tyr, 190<sup>th</sup> Asn, and 209<sup>th</sup> Gln with another amino acid, respectively.

34. (New) A mutant  $\alpha$ -amylase obtained by introducing a mutation into SEQ ID NO:1,

wherein said mutation consists of:

the substitution of an amino acid residue selected from the group consisting of: 49<sup>th</sup> Asn, 107<sup>th</sup> Met, 167<sup>th</sup> Gln, 169<sup>th</sup> Tyr, 190<sup>th</sup> Asn, and 209<sup>th</sup> Gln with another amino acid, respectively.

35. (New) A mutant  $\alpha$ -amylase obtained by introducing a mutation into SEQ ID NO:1,

wherein said mutation consists of:

the substitution of an amino acid residue selected from the group consisting of: 49<sup>th</sup> Asn, 107<sup>th</sup> Met, 205<sup>th</sup> His, 167<sup>th</sup> Gln, 169<sup>th</sup> Tyr, 190<sup>th</sup> Asn, and 209<sup>th</sup> Gln with another amino acid, respectively.

36. (New) The mutant  $\alpha$ -amylase according to claim 30, wherein the 167<sup>th</sup> Gln is substituted with Glu, and wherein said 169<sup>th</sup> Tyr is substituted with Lys.

37. (New) The mutant  $\alpha$ -amylase according to claim 31, wherein the 190<sup>th</sup> Asn is substituted with Phe, and wherein said 209<sup>th</sup> Gln is substituted with Val.

38. (New) The mutant  $\alpha$ -amylase according to claim 32, wherein the 167<sup>th</sup> Gln is substituted with Glu, the 169<sup>th</sup> Tyr is substituted with Lys, the 190<sup>th</sup> Asn is substituted with Phe, and wherein said 209<sup>th</sup> Gln is substituted with Val.

39. (New) The mutant  $\alpha$ -amylase according to claim 33, wherein the 107<sup>th</sup> Met is substituted with Leu, the 167<sup>th</sup> Gln is substituted with Glu, the 169<sup>th</sup> Tyr is substituted with Lys, the

190<sup>th</sup> Asn is substituted with Phe, and wherein said 209<sup>th</sup> Gln is substituted with Val.

40. (New) The mutant  $\alpha$ -amylase according to claim 34, wherein the 49<sup>th</sup> Asn is substituted with Ser, the 107<sup>th</sup> Met is substituted with Leu, the 167<sup>th</sup> Gln is substituted with Glu, the 169<sup>th</sup> Tyr is substituted with Lys, the 190<sup>th</sup> Asn is substituted with Phe, and wherein said 209<sup>th</sup> Gln is substituted with Val.

41. (New) The mutant  $\alpha$ -amylase according to claim 35, wherein the 49<sup>th</sup> Asn is substituted with Ser, the 107<sup>th</sup> Met is substituted with Leu, the 167<sup>th</sup> Gln is substituted with Glu, the 169<sup>th</sup> Tyr is substituted with Lys, the 190<sup>th</sup> Asn is substituted with Phe, the 205<sup>th</sup> His is substituted with Arg, and wherein said 209<sup>th</sup> Gln is substituted with Val.

42. (New) A mutant  $\alpha$ -amylase obtained by introducing a mutation into SEQ ID NO:1,

wherein said mutation consists of:

the substitution of an amino acid residue selected from the group consisting of: 167<sup>th</sup> Gln, 169<sup>th</sup> Tyr, 190<sup>th</sup> Asn, and 209<sup>th</sup> Gln with Glu, Lys, Phe, and Val, respectively, and

the substitution of an amino terminal sequence from 1<sup>st</sup> Asp through 19<sup>th</sup> Gly of SEQ ID NO:1 with an amino acid sequence from 1<sup>st</sup> His to 21<sup>st</sup> Gly of SEQ ID NO:2.

43. (New) A mutant  $\alpha$ -amylase obtained by introducing a mutation into SEQ ID NO:1,

wherein said mutation consists of:

the substitution of an amino acid residue selected from the group consisting of: 144<sup>th</sup> Ser, 190<sup>th</sup> Asn, and 209<sup>th</sup> Gln with another amino acid, respectively.

44. (New) The mutant  $\alpha$ -amylase according to claim 43, wherein the 144<sup>th</sup> Ser is substituted with Pro, the 190<sup>th</sup> Asn is substituted with Phe, and wherein said 209<sup>th</sup> Gln is substituted with Val.

45. (New) A mutant  $\alpha$ -amylase obtained by introducing a mutation into SEQ ID NO:1,

wherein said mutation consists of:

the substitution of an amino acid residue selected from the group consisting of: 16<sup>th</sup> Glu, 144<sup>th</sup> Ser, 190<sup>th</sup> Asn, and 209<sup>th</sup> Gln with another amino acid, respectively.

46. (New) The mutant  $\alpha$ -amylase according to claim 44, wherein the 16<sup>th</sup> Glu is substituted with Pro, the 144<sup>th</sup> Ser is substituted with Pro, the 190<sup>th</sup> Asn is substituted with Phe, and wherein said 209<sup>th</sup> Gln is substituted with Val.